

Appln. No. 11/060,220

Attorney Docket No. 10808-224

I. Amendments to the Claims

1. (Original): A system for detecting fault conditions in an audio system, the audio system including a remote audio generation device, an amplifier unit, and a wire harness connected therebetween, the system comprising:

an audio generation circuit;

a switch coupled to the audio generation circuit configured to selectively connect the audio generation circuit to the amplifier unit through the wire harness; and

a fault detection circuit configured to monitor an audio output of the switch to detect fault conditions and provide a control signal to a control input of the switch to selectively disconnect the audio generation circuit from the wire harness.

2. (Original): The system according to claim 1, wherein the fault detection circuit is configured to send a diagnostic signal to an audio system controller when a fault condition occurs.

3. (Original): The system according to claim 2, wherein the audio system controller stores the diagnostic signal in memory.

4. (Original): The system according to claim 1, wherein the fault detection circuit is configured to generate the control signal if the audio output is above a threshold value.

5. (Original): The system according to claim 4, wherein the fault detection circuit includes a counter, and the fault detection circuit is configured to generate the

Appln. No. 11/060,220

Attorney Docket No. 10808-224

control signal if the audio output exceeds the threshold for a predetermined number of samples.

6. (Original): The system according to claim 1, wherein the fault detection circuit is configured to generate the control signal if the audio output is below a threshold value.

7. (Original): The system according to claim 6, wherein the fault detection circuit includes a counter, and the fault detection circuit is configured to generate the control signal if the audio output exceeds the threshold for a predetermined number of samples.

8. (Original): The system according to claim 1, wherein the fault detection circuit is configured to average multiple samples to generate an average output and compare the average output to a threshold.

9. (Original): The system according to claim 1, wherein the fault detection circuit is configured to delay for a predetermined time period before sampling once a fault condition has occurred.

10. (Original): The system according to claim 1, further comprising:
a transistor coupled to the switch, the transistor being configured to simultaneously control multiple outputs of the switch simultaneously.

11. (Original): The system according to claim 1, further comprising:

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-3-

Appln. No. 11/060,220

Attorney Docket No. 10808-224

a first capacitor in electrical series connection between the switch and the wire harness.

12. (Original): The system according to claim 11, further comprising:
a first resistor between the switch and a power source.
13. (Original): The system according to claim 12, further comprising:
a second resistor between the wire harness and the power source.
14. (Original): The system according to claim 13, further comprising:
a second capacitor between the wire harness and an electrical ground.
15. (Original): The system according to claim 1, wherein the fault detection circuit is coupled to the audio outputs of the switch through the first capacitor.
16. (Original): A method for detecting fault conditions in an audio system, the audio system including a remote audio generation device, an amplifier unit, and a wire harness connected therebetween, the method comprising:
generating an audio signal using an audio generation circuit;
selectively connecting the audio generation circuit to the amplifier unit through the wire harness using a switch; and
monitoring an audio output of the switch to detect fault conditions; and
providing a control signal to a control input of the switch to selectively disconnect the audio generation circuit from the wire harness.

Appl. No. 11/060,220

Attorney Docket No. 10808-224

17. (Original): The method according to claim 16, further comprising providing a diagnostic signal to an audio system controller when a fault condition occurs.

18. (Original): The method according to claim 17, further comprising storing the diagnostic signal in memory.

19. (Original): The method according to claim 16, wherein the fault detection circuit is configured to generate the control signal if the audio output is above a threshold value.

20. (Original): The method according to claim 19, wherein the fault detection circuit includes a counter, and the fault detection circuit is configured to generate the control signal if the audio output exceeds the threshold for a predetermined number of samples.

21. (Original): The method according to claim 16 wherein the fault detection circuit is configured to generate the control signal if the audio output is below a threshold value.

22. (Original): The method according to claim 21, wherein the fault detection circuit includes a counter, and the fault detection circuit is configured to generate the control signal if the audio output exceeds the threshold for a predetermined number of samples.

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Appln. No. 11/060,220

Attorney Docket No. 10808-224

23. (Original): The method according to claim 16, wherein monitoring the audio output includes averaging multiple samples to generate an average output and comparing the average output to a threshold.

24. (Original): The method according to claim 16, further comprising delaying for a predetermined time period before sampling once a fault condition has occurred.

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